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WATER POLLUTION CONTROL RESEARCH AND TRAINING GRANTS. INDEX OF 1962-1964 RESEARCH GRANT PUBLICATIONS AND REPORTS

Federal Water Pollution Control Administration
Washington, D. C.

1964

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Water Pollution Control Research and Training Grants

Index of 1962-1964

RESEARCH GRANT PUBLICATIONS AND REPORTS

FEDERAL WATER POLLUTION CONTROL ADMINISTRATION

Washington, D. C. 20203

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DISCRIMINATION PROHIBITED--Title VI of the Civil Rights Act of 1964 states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance." Therefore, the Research and Training Grant Program of the Federal Water Pollution Control Administration, like every program or activity receiving financial assistance from the Department of Health, Education, and Welfare, must be operated in compliance with this law.

FOREWORD

The Federal Water Pollution Control Act authorizes the award of grants-in-aid for research projects relating to the causes, control, and prevention of water pollution.

Purposes

The water pollution control research grant program was initiated in 1962 with the award of 159 grants; the program increased in 1963 to 184 awards, and in 1964 to 203 awards. These awards support projects conducted principally by investigators in educational institutions throughout the Nation, in a few State agencies, and by individuals.

Research grants are awarded for the conduct of basic and applied research projects. The research studies extend over a wide variety of engineering fields, and include many biological, physical, and social science disciplines.

Accomplishments

The principal accomplishments resulting from research grant support are:

1. Information. New information developed by research is reported in the technical literature. The information provides tools to assist scientists and engineers in solving critical problems of water pollution control.

2. Training. New training involved in research expands the competence of professional personnel and student assistants. The training provides a means of meeting the expanding need for trained research manpower in the water pollution control field.

Publications

Investigators supported by research grants are expected to make the results of the research promptly available to the scientific public. Publication provides the most efficient means of communicating information about current research efforts.

The "Index of 1962-1964 Research Grant Publications and Reports" includes a total of 545 references to recent research supported by research grants. The value of this research information will be determined by the extent to which it is applied in the total research and development effort for controlling water pollution problems.

WATER POLLUTION CONTROL

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INTRODUCTION

The "Index of Research Grant Publications and Reports" is a source document for the retrieval of references to the known literature which has resulted from research grants awarded under the Federal Water Pollution Control Act during 1962, 1963, and 1964.

Numerical List. Each research grant is identified by the grant number, and the project title, project director, and grantee institution or agency. The bibliographic references which follow are publications and reports produced under grant support. (Pages 1-42).

Index to Project Directors. An alphabetical list of project directors identifies the appropriate grant number for searching the numerical list to locate projects, publications, and reports when the project director is known. (Pages 43-44).

Index to Authors. An alphabetical list of authors identifies the appropriate grant number for searching the numerical list to locate publications, reports, and project titles when the author is known. (Pages 45-49).

Index to Research Subjects. A subject index of key terms identifies the appropriate grant number for searching the numerical list to locate research subjects. This index is keyed to research subjects whether they apply to the project title or to bibliographic references. (Pages 50-55).

The "Index" is designed to provide a useful record of the literature references credited to water pollution control research grant projects, and to facilitate communication between investigators. The 545 references to publications and reports have resulted from 143 projects, an average of 3.8 per grant.

It is recognized that the first "Index" cannot present a complete listing of all publications and reports derived from research grant projects. The "Index" is to be issued annually and made as comprehensive as possible. The assistance of all individuals who can provide additional references will be appreciated. Address correspondence to:

Research and Training Grant Program
Federal Water Pollution Control Administration
Washington, D. C. 20203

WATER POLLUTION CONTROL

RESEARCH GRANT PUBLICATIONS AND REPORTS

1962 - 1964

NUMERICAL LIST

GRANT NO.	PROJECT TITLE AND PUBLICATIONS	PROJECT DIRECTOR AND LOCATION
WP-00002	TOXIC PROPERTIES OF THE BLUE-GREEN ALGAE	Dr. Floyd F. Davidson, Dept. of Biology, Baylor University, Waco, Texas
	Davidson, F. F. "Antibacterial Activity of Oscillatoria formosa bory Extract." Water and Sewage Works, Nov. 1961.	
	Davidson, F. F. "Antibacterial Activity of Extracts Obtained from Blue-Green Algae." Proc. 17th Ann. Purdue Industrial Waste Conf., May 3, 1962.	
WP-00003	TOXICITY OF PESTICIDES TO AQUATIC INVERTEBRATES	Dr. Arden R. Gaufin, Div. Biological Sciences, University of Utah, Salt Lake City, Utah
	Nebeker, A. V. and Gaufin, A. R. "Bioassays to Determine the Toxicity of Pesticides to the Amphipod Crustacean, Gammarus lacustris Sars." Proc. Utah Acad. Sci., Vol. 41, Part 1, May 1963.	
	Jensen, L. D. and Gaufin, A. R. "Effects of Ten Organic Insecticides on Two Species of Stonefly Naiads." Trans. Am. Fisheries Soc., Vol. 93, No. 1, Jan. 1964.	
	Jensen, L. D. and Gaufin, A. R. "Long-term Effects of Organic Insecticides on Two Species of Stonefly Naiads." Trans. Am. Fisheries Soc., Vol. 93, Nov. 4, Oct. 1964.	
	Gaufin, A. R. "The Effects of Insecticides on Aquatic Life." Proc. 13th Ann. Meeting Utah Mosquito Abatement Assn., Mar. 18-19, 1960.	
	Gaufin, A. R. "Bioassays to Determine the Toxicity of Pesticides to Aquatic Invertebrates." Proc. 15th Ann. Purdue Industrial Waste Conf., 1960.	
	Gaufin, A. R. "The Controversial Role of Insecticides." Proc. 14th Ann. Meeting Utah Mosquito Abatement Assn., 1961.	
	Gaufin, A. R., Jensen, L. and Nelson, T. "Bioassays to Determine Pesticide Toxicity to Aquatic Invertebrates." Water and Sewage Works, Sept. 1961.	
WP-00005	A STUDY OF MICROORGANISMS INDUCING TASTES AND ODORS IN WATER	Dr. R. P. Collins, Dept. of Botany, University of Connecticut, Storrs, Conn.
	Collins, R. P. and Bean, G. H. "Volatile Constituents Obtained from Chlamydomonas globosa I. The Carbonyl Fraction." Phycologia, Vol. 3, Sept. 2, 1963.	

GRANT NO.	PROJECT TITLE AND PUBLICATIONS	PROJECT DIRECTOR AND LOCATION
WP-00005 (cont.)	A STUDY OF MICROORGANISMS INDUCING TASTES AND ODORS IN WATER	Dr. R. P. Collins, Dept. of Botany, University of Connecticut, Storrs, Conn.
	Gaines, H. D. and Collins, R. P. "Volatile Substances Produced by Streptomyces odorifer." Lloydia, 26: 247-253, 1963.	
	Collins, R. P. and Gaines, H. D. "The Production of Hydrogen Sulfide by Streptomyces odorifer." Appl. Microbiol., Vol. 12, No. 4, July 1964.	
	Collins, R. P. and Gaines, H. D. "Volatile Constituents Produced by the Actinomycete Streptomyces odorifer and the Alga Synura petersenii." Proc. 19th Ann. Purdue Industrial Waste Conf., May 1964.	
WP-00006	MICROBIAL TRANSFORMATION OF ORGANIC SULFUR COMPOUNDS	Dr. R. L. Starkey, Dept. Agric. Microbiol. Rutgers University, New Brunswick, N. J.
	Lathen, E. and Starkey, R. L. "Microbial Dissimilation of Thiourea and Substituted Thioureas." Bacteriol. Proc. p. 5, (abstract) 1964.	
WP-00008	GAS TRANSFER TO AND FROM TURBULENT LIQUIDS	Dr. W. E. Dobbins, Dept. of Civil Eng. New York University, New York, N. Y.
	Dobbins, W. E. "Mechanism of Gas Absorption by Turbulent Liquids." Int'l. Conf. on Water Pollution Research, London, Sept. 1962.	
	Dobbins, W. E. "BOD and Oxygen Relationships in Streams." J. San. Eng. Div., Proc. ASCE, Vol. 90, No. SA3, June 1964.	
WP-00009	ENTERIC BACTERIA AND VIRUSES IN SEWAGE, WATER AND SHELLFISH	Dr. L. W. Slanetz, Dept. of Microbiol. University of N. Hampshire, Durham, N. Hamp.
	Slanetz, L. W. and Bartley, C. H. "Detection and Sanitary Significance of Fecal Streptococci in Water." Am. J. Pub. Health, Vol. 54, No. 4, April 1964.	
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WP-00010	USE OF FISH TO DETECT ORGANIC INSECTICIDES IN WATER	Dr. C. M. Weiss, Dept. of Env. Sci. and Eng. Univ. of N. Carolina, Chapel Hill, N. C.
	Oglesby, R. T. and Weiss, C. M. "Some Biochemical Constituents of Fish Tissue, with Special Reference to Brains." Trans. Am. Fisheries Soc., Vol. 92, April 1963.	
	Weiss, C. M. and Gakstatter, J. H. "Detection of Pesticides in Water by Biochemical Assay." J. Water Pollution Control Fed., Vol. 36, No. 2, Feb. 1964.	
	Weiss, C. M. "Organic Pesticides and Water Pollution." Public Works, Vol. 95, No. 12, Dec. 1964.	
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GRANT NO.	PROJECT TITLE AND PUBLICATIONS	PROJECT DIRECTOR AND LOCATION

WP-00017 — A SHORT-TERM TOTAL OXYGEN DEMAND TEST — Dr. A. W. Busch, Dept. of Environmental Engr., William Marsh Rice Univ., Houston, Texas

Rao, T. S. and Busch, A. W. "BOD Progression in Soluble Substrates - V - TOD Acceleration with Log-Phase Seeding." Proc. 17th Ann. Purdue Industrial Waste Conf., May 1962.

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Hiser, L. L. and Busch, A. W. "An 8-Hour Biological Oxygen Demand Test Using Mass Culture Aeration." J. Water Pollution Control Fed., Vol. 36, No. 4, April 1964.

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WP-00013 — OXYGENATION RATE OF FERROUS IRON IN NATURAL WATERS — Dr. Werner Stumm, Div. of Engr. and Applied Physics, Harvard Univ., Cambridge, Mass.

Stumm, W. and Lee, G. F. "Oxygenation of Ferrous Iron." Indust. and Eng. Chem., Vol. 53, Feb. 1961.

Stumm, W. and Galal-Gorchev, H. "The Reaction of Ferric Iron with Ortho-Phosphate." J. Inorganic Nuclear Chem., Vol. 25, 1963.

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GRANT NO.	PROJECT TITLE AND PUBLICATIONS	PROJECT DIRECTOR AND LOCATION
WP-00016	MICROBIOLOGY OF THE DILUTE ENRICHMENT	Dr. R. S. Wolfe, Dept. of Microbiol. Univ. of Illinois, Urbana, Illinois

Gaudy, E. and Wolfe, R. S. "Composition of an Extracellular Polysaccharide Produced by Sphaerotilus natans." Appl. Microbiol., Vol. 10, No. 3, May 1962.

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WP-00017	FUNDAMENTAL FACTORS IN TREATMENT OF IRON-BEARING WATERS	Dr. R. S. Engelbrecht, Dept. of Civil Eng. University of Illinois, Urbana, Illinois

Longley, J. M., Englebrecht, R. S. and Hargrave, G. E. "Laboratory and Field Studies on the Treatment of Iron-Bearing Waters." JAWWA, Vol. 54, No. 6, June 1962.

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WP-00018	FATE OF SYNTHETIC DETERGENTS IN SOIL AND GROUND WATER	Dr. Ben B. Ewing, Dept. of Civil Eng. University of Illinois, Urbana, Illinois

Suess, M. J. "Retardation of ABS in Different Aquifers." JAWWA, Vol. 56, No. 1, Jan. 1964.

Suess, M. J. "ABS Adsorption on Soils." J. Water Pollution Control Fed., Vol. 36, No. 11, Nov. 1964.

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GRANT NO.	PROJECT TITLE AND PUBLICATIONS	PROJECT DIRECTOR AND LOCATION
WP-00019	SYSTEMS ANALYSIS OF MUNICIPAL SEWAGE TREATMENT	Dr. Abraham Charnes, Dept. of Eng. Sciences, Northwestern Univ., Evanston, Illinois

Deininger, R. A. "Water Quality Management: The Planning of Economically Optimal Pollution Control Systems." Ph.D. Thesis, Northwestern U., June 1964.

Charnes, A. and Cromwell, R. E. "A Method of Solution of Some Non-Linear Problems in Abatement of Stream Pollution." Syst. Res. Group, Memo. No. 103, Northwestern U., May 1964.

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"Location-Allocation Problems in the l_1-Metric." Syst. Res. Group, Memo. 105, Northwestern U., May 1964.

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WP-00020	IMPROVEMENT OF OXIDATION POND EFFLUENTS BY ORGANISMS	Dr. John W. DeWitt, Div. of Nat. Resources, Humboldt State College, Arcata, California

Hazel, C. R. "Chlorophyll and Non-Astacin Pigment Concentrations, and Photosynthetic Oxygen Production in a Sewage Oxidation Pond." M.S. Thesis, Humboldt State Coll., 1963.

WP-00023	ENVIRONMENTAL RELATIONSHIPS OF BENTHOS IN SALT PONDS	Dr. C. J. Fish, Graduate School of Oceanogr. Univ. of Rhode Island, Kingston, Rhode Island

Lackey, J. B. "Bottom Sampling and Environmental Niches." Limnol. and Ocean., Vol. 6:271, 1961.

Jeffries, H. P. "Environmental Characteristics of Raritan Bay, a Polluted Estuary." Limnol. and Ocean., Vol. 7, No. 1, Jan. 1962.

Jeffries, H. P. "Comparative Studies on Estuarine Zooplankton." Limnol. and Ocean., Vol. 9, No. 3, July 1964.

Jeffries, H. P. "Indices of Ecological Condition in Marine Organisms - a Trial Study." Proc. Symp. on Exp. Marine Ecol., U. of Rhode Island, 1964.

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GRANT NO.	PROJECT TITLE AND PUBLICATIONS	PROJECT DIRECTOR AND LOCATION
WP-00023 (cont.)	ENVIRONMENTAL RELATIONSHIPS OF BENTHOS IN SALT PONDS	Dr. C. J. Fish, Graduate School of Oceanogr. Univ. of Rhode Island, Kingston, Rhode Island

Dillon, W. P. "Flotation Technique for Separating Fecal Pellets and Small Marine Organisms from Sand." Limnol. and Ocean., Vol. 9:601-602, 1964.

Sieburth, J. McN. "Role of Algae in Controlling Bacterial Population in Estuarine Waters." Comm. Int'l. pour L'Explor. Sci. de la Mer Mediterranee, April 1964.

WP-00024	INTERNAL HYDRAULIC WORK IN FLOCCULATION	Dr. Gordon M. Fair, Dept. of Sanitary Eng. Harvard University, Cambridge, Mass.

Fair, G. M. and Gemmell, R. S. "A Mathematical Model of Coagulation." J. Colloid Science, Vol. 19, 360-372, 1964.

WP-00026	NUTRITIVE AND DISEASE TRANSMITTING POTENTIAL OF SEWAGE GROWN ALGAE	Dr. William J. Oswald, Inst. of Eng. Research, Univ. of Calif. Berkeley, Calif.

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Golueke, C. G. and Oswald, W. J. "Use of Ponds in Rural Sanitation." Proc. of the California Assn. of Sanitarians, 13th Ann. State-Wide Educat. Symp., April 16-17, 1964.

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GRANT NO.	PROJECT TITLE AND PUBLICATIONS	PROJECT DIRECTOR AND LOCATION
WP-00026 (cont.)	NUTRITIVE AND DISEASE TRANSMITTING POTENTIAL OF SEWAGE GROWN ALGAE	Dr. William J. Oswald, Inst. of Eng. Research, Univ. of Calif. Berkeley, Calif.

Oswald, W. J. "Aerobic and Anaerobic Ponds, (in) Industries Idea Clinic." J. Water Pollution Control Fed., Vol. 36, No. 8, Aug. 1964.

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WP-00027	MULTIPURPOSE MANAGEMENT TECHNIQUES FOR REUSABLE WATER	Dr. Don M. Rees, Div. of Biological Sciences, Univ. of Utah, Salt Lake City, Utah

Andersen, D. M. and Rees, D. M. "A Report of the First Year Study on Development of Techniques for Multi-purpose Management of Reusable Water." Proc. 16th Ann. Meeting Utah Mosquito Abatement Assn., 1963.

Andersen, D. M., Rees, D. M. and Arnold, F. D. "Recent Accomplishments in the Cooperative Multi-purpose Water Management Program in Utah." Proc. 17th Ann. Meeting Utah Mosquito Abatement Assn., 1964.

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WP-00029	MULTIPURPOSE MODIFICATION OF PLAYA SINKS	Dr. David M. Cowgill, City Health Dept. P. O. Box 998, Lubbock, Texas
	"Multipurpose Modification of Playa Sinks." First Ann. Progress Report, 1962.	
	"Multipurpose Modification of Playa Sinks." Second Ann. Progress Report, 1963.	
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	Redell, D. L. "Modification of Playa Lakes." The Cross Section 11(2):3. (A Monthly Publication of the High Plains Underground Water Conservation District No. 1) 1964.	
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WP-00032	DESIGN CRITERIA FOR LIVESTOCK WASTE LAGOONS	Dr. E. A. Jeffrey, Dept. of Sanitary Eng. Univ. of Missouri, Columbia, Missouri
	Jeffrey, E. A., Blackman, W. C. Jr. and Ricketts, R. L. "Aerobic and Anaerobic Digestion Characteristics of Livestock Wastes." Eng. Series Bull. No. 57, Eng. Exper. Station, U. of Missour, Columbia, Mo., 1963.	
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WP-00039	DETERMINATION OF TRANSITION ZONES IN SETTLING BASINS	C. H. Bonney, School of Engineering, Vanderbilt Univ., Nashville, Tennessee
	Bonney, C. H., Webb, M. R. and Rowan, W. H. "Tank Flow Line Determination." Water and Sewage Works, Feb. 1963.	
WP-00043	MODES OF CORROSION INHIBITION IN NATURAL WATERS	Dr. Werner Stumm, Div. of Engr. and Applied Physics, Harvard Univ., Cambridge, Mass.
	Schneider, C. R. and Stumm, W. "Evaluation of Corrosion in Distribution Systems." JAWWA, Vol. 56, No. 5, May 1964.	
	Weber, W. J. Jr. and Stumm, W. "Mechanism of Hydrogen Ion Buffering in Natural Waters." JAWWA, Vol. 55, No. 12, Dec. 1963.	
WP-00044	A CONTINUOUS MULTIPARAMETER WATER QUALITY MONITOR	Dr. M. K. Testerman, Dept. of Electronics and Instrumentation, Univ. of Ark., Little Rock
	Testerman, M. K., Borchers, C. E. and Raible, R. W. "A Self-Contained Water Quality Monitor." Proc. Am. Chem. Soc., Div. Water and Waste Chem., Phila., April 1964.	
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GRANT NO.	PROJECT TITLE AND PUBLICATIONS	PROJECT DIRECTOR AND LOCATION
WP-00047	FACTORS INFLUENCING FREE-LIVING NEMATODES IN WATER	Dr. R. S. Engelbrecht, Dept. of Civil Eng. Univ. of Illinois, Urbana, Illinois

Chaudhuri, N., Siddiqi, R. and Engelbrecht, R. S. "Source and Persistence of Nematodes in Surface Waters." JAWWA, Vol. 56, No. 1, Jan. 1964.

Chaudhuri, N. "Occurrence and Controlled Environmental Studies of Nematodes in Natural and Waste Waters." Ph.D. Thesis, Civil Eng. Studies, San. Eng. Series No. 20, U. of Illinois, Feb. 1964.

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WP-00051	HYDROLOGIC PROPERTIES OF FOREST HUMUS TYPES	Dr. Stanley P. Gessel, Dept. of Forestry, Univ. of Washington, Seattle, Washington

Cole, D. W., Gessel, S. P. and Held, E. E. "Tension Lysimeter Studies of Ion and Moisture Movement." Soil Sci. Soc. Am. Proc., Vol. 25:321, July-Aug. 1961.

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Keyterms in this index refer to either the project title or publications listed under the designated grant. If specific or narrow subjects are desired, two or more keyterms may be combined to eliminate the non-specific references. For example, Industrial wastes gives thirteen references, while Petrochemical Industrial wastes gives only two.

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